CLAIMS

What is claimed is:

1   1. A method comprising:

2   receiving a line of text, the line of text having a set of ordered characters;

3   flipping the characters of the line of text about a display axis;

4   identifying a set of runs of foreign characters in the line of text; and

5   flipping the characters of the runs of the set of runs of foreign characters within

6   each run of foreign characters.

1   2. The method of claim 1 further comprising:

2   receiving a block of text;

3   breaking the block of text into a set of lines of text; and

4   performing the receiving the line of text, flipping the characters of the line,

5   identifying and flipping the characters of the runs for each line of text of the set of lines

6   of text.

1   3. The method of claim 2 further comprising:

2   passing the line of text to a native operating system for display.

1   4. The method of claim 1 wherein:

2   the text is received from an application with no capability of handling bi-

3   directional text.

1   5. The method of claim 1 wherein:

2   the foreign text is defined as text which should be displayed in a left-to-right

3   fashion.

1   6. The method of claim 1 wherein:

2   the foreign text is defined as text which should be displayed in a right-to-left

3   fashion.

1   7. A machine-readable medium embodying instructions, which, when executed

2   by a processor, cause the processor to perform a method, the method comprising:

3   receiving a line of text, the line of text having a set of ordered characters;

4   flipping the characters of the line of text about a display axis;

5   identifying a set of runs of foreign characters in the line of text; and

6   flipping the characters of the runs of the set of runs of foreign characters within

7   each run of foreign characters.

1   8. The machine readable medium of claim 7 further embodying instructions

2   which when executed by a processor, cause the processor to perform the method

3   further comprising:

4   receiving a block of text;

5   breaking the block of text into a set of lines of text; and

6   performing the receiving the line of text, flipping the characters of the line,

7   identifying and flipping the characters of the runs for each line of text of the set of lines

8   of text.

1   9. The machine readable medium of claim 7 further embodying instructions

2   which when executed by a processor, cause the processor to perform the method

3   further comprising:

4   passing the line of text to a native operating system for display.

1   10. A processor which executes instructions causing the processor to perform

2   the method comprising:

3   receiving a line of text, the line of text having a set of ordered characters;

4   flipping the characters of the line of text about a display axis;

5   identifying a set of runs of foreign characters in the line of text; and

6   flipping the characters of the runs of the set of runs of foreign characters within

7   each run of foreign characters.

1   11. The processor of claim 10 wherein the method further comprises:

2   receiving a block of text;

3   breaking the block of text into a set of lines of text; and

4   performing the receiving the line of text, flipping the characters of the line,

5   identifying and flipping the characters of the runs for each line of text of the set of lines

6   of text.

1   12. The processor of claim 11 wherein the method further comprises:

2   passing the line of text to a native operating system for display.

1   13. A server configured to send instructions to a remote client, to configure the

2   remote client to perform the method comprising:

3   receiving a line of text, the line of text having a set of ordered characters;

4   flipping the characters of the line of text about a display axis;

5   identifying a set of runs of foreign characters in the line of text; and

6   flipping the characters of the runs of the set of runs of foreign characters within

7   each run of foreign characters.

1   14. The server of claim 13 wherein the server is configured to send instructions

2   to the client to configure the client to perform the method further comprising:

3   receiving a block of text;

4   breaking the block of text into a set of lines of text; and

5   performing the receiving the line of text, flipping the characters of the line,

6   identifying and flipping the characters of the runs for each line of text of the set of lines

7   of text.

1   15. The server of claim 14 wherein the server is configured to send instructions

2   to the client to configure the client to perform the method further comprising:

3   passing the line of text to a native operating system for display.

1   16. The server of claim 15 wherein the client is a remote mobile device.

1   17. The server of claim 15 wherein the client is a wireless device.

1   18. A server configured to download information to a client, the information

2   including a set of instructions, the instructions for execution by a processor of the client,

3   the set of instructions causing the processor to perform a method, the method

4   comprising:

5   receiving a line of text, the line of text having a set of ordered characters;

6   flipping the characters of the line of text about a display axis;

7   identifying a set of runs of foreign characters in the line of text; and

8   flipping the characters of the runs of the set of runs of foreign characters within

9   each run of foreign characters.

1   19. The server of claim 18 wherein the set of instructions cause the processor to

2   perform the method further comprising:

3   receiving a block of text;

4   breaking the block of text into a set of lines of text; and

5   performing the receiving the line of text, flipping the characters of the line,

6   identifying and flipping the characters of the runs for each line of text of the set of lines

7   of text.

1   20. The server of claim 19 wherein the set of instructions cause the processor to

2   perform the method further comprising:

3   passing the line of text to a native operating system for display.

1   21. The server of claim 20 wherein the client is a remote mobile device.

1   22. The server of claim 20 wherein the client is a wireless device.

1   23. A method comprising:

2   receiving a line of text, the line of text having a set of ordered characters;

3   generating a set of runs within the line of text;

4   flipping a location and an orientation of each run of the set of runs about an axis

5   of a display; and

6   identifying a set of runs of foreign characters within the line of text.

1   24. The method of claim 23 further comprising:

2   flipping the orientation of each run of foreign characters within the run of foreign

3   characters.

1   25. The method of claim 23 further comprising:

2   rendering each run of the set of runs, except for the runs of foreign characters, in

3   a first orientation; and

4   rendering each run of foreign characters in a second orientation.

1   26. The method of claim 25 further comprising:

2   receiving a block of text having a set of ordered characters and a location; and

3   breaking the block of text into a set of lines of text, each line having a set of

4   ordered characters and a location.

1   27. The method of claim 26 wherein:

2   the text is received from an application with no capability of handling bi-

3   directional text.

1   28. The method of claim 27 wherein:

2   the foreign text is defined as text which should be displayed in a left-to-right

3   fashion.

1   29. The method of claim 27 wherein:

2   the foreign text is defined as text which should be displayed in a right-to-left

3   fashion.

1   30. A machine-readable medium embodying instructions, which, when executed

2 by a processor, cause the processor to perform a method, the method comprising:

3   receiving a line of text, the line of text having a set of ordered characters;

4   generating a set of runs within the line of text;

5   flipping a location and an orientation of each run of the set of runs about an axis

6 of a display; and

7   identifying a set of runs of foreign characters within the line of text.

1   31. The machine readable medium of claim 30 further embodying instructions

2 which when executed by a processor, cause the processor to perform the method

3 further comprising:

4   flipping the orientation of each run of foreign characters within the run of foreign

5 characters.

1   32. The machine readable medium of claim 30 further embodying instructions

2 which when executed by a processor, cause the processor to perform the method

3 further comprising:

4   rendering each run of the set of runs, except for the runs of foreign characters, in

5 a first orientation; and

6   rendering each run of foreign characters in a second orientation.

1   33. The machine readable medium of claim 32 further embodying instructions

2   which when executed by a processor, cause the processor to perform the method

3   further comprising:

4   receiving a block of text having a set of ordered characters and a location; and

5   breaking the block of text into a set of lines of text, each line having a set of

6   ordered characters and a location.

1   34. A processor which executes instructions causing the processor to perform

2   the method comprising:

3   receiving a line of text, the line of text having a set of ordered characters;

4   generating a set of runs within the line of text;

5   flipping a location and an orientation of each run of the set of runs about an axis

6   of a display; and

7   identifying a set of runs of foreign characters within the line of text.

1   35. The processor of claim 34 wherein the method further comprises:

2   flipping the orientation of each run of foreign characters within the run of foreign

3   characters.

1   36. The processor of claim 34 wherein the method further comprises:

2   rendering each run of the set of runs, except for the runs of foreign characters, in

3 a first orientation; and

4   rendering each run of foreign characters in a second orientation.

1   37. The processor of claim 36 wherein the method further comprises:

2   receiving a block of text having a set of ordered characters and a location; and

3   breaking the block of text into a set of lines of text, each line having a set of

4 ordered characters and a location.

1   38. A server configured to send instructions to a remote client, to configure the

2 remote client to perform the method comprising:

3   receiving a line of text, the line of text having a set of ordered characters;

4   generating a set of runs within the line of text;

5   flipping a location and an orientation of each run of the set of runs about an axis

6 of a display; and

7   identifying a set of runs of foreign characters within the line of text.

1   39. The server of claim 38 wherein the server is configured to send instructions

2 to the client to configure the client to perform the method further comprising:

3   flipping the orientation of each run of foreign characters within the run of foreign

4 characters.

1   40. The server of claim 38 wherein the server is configured to send instructions

2   to the client to configure the client to perform the method further comprising:

3   rendering each run of the set of runs, except for the runs of foreign characters, in

4   a first orientation; and

5   rendering each run of foreign characters in a second orientation.

1   41. The server of claim 40 wherein the server is configured to send instructions

2   to the client to configure the client to perform the method further comprising:

3   receiving a block of text having a set of ordered characters and a location; and

4   breaking the block of text into a set of lines of text, each line having a set of

5   ordered characters and a location.

1   42. The server of claim 41 wherein the client is a remote mobile device.

1   43. The server of claim 41 wherein the client is a wireless device.

1 44. A server configured to download information to a client, the information

2 including a set of instructions, the instructions for execution by a processor of the client,

3 the set of instructions causing the processor to perform a method, the method

4 comprising:

5   receiving a line of text, the line of text having a set of ordered characters;

6   generating a set of runs within the line of text;

7   flipping a location and an orientation of each run of the set of runs about an axis

8 of a display; and

9   identifying a set of runs of foreign characters within the line of text.

1 45. The server of claim 44 wherein the set of instructions cause the processor to

2 perform the method further comprising:

3   flipping the orientation of each run of foreign characters within the run of foreign

4 characters.

1 46. The server of claim 44 wherein the set of instructions cause the processor to

2 perform the method further comprising:

3   rendering each run of the set of runs, except for the runs of foreign characters, in

4 a first orientation; and

5   rendering each run of foreign characters in a second orientation.

1   47. The server of claim 46 wherein the set of instructions cause the processor to

2 perform the method further comprising:

3   receiving a block of text having a set of ordered characters and a location; and

4   breaking the block of text into a set of lines of text, each line having a set of

5 ordered characters and a location.

1   48. The server of claim 47 wherein the client is a remote mobile device.

1   49. The server of claim 47 wherein the client is a wireless device.

1   50. A method comprising:

2   receiving a line of text, the line of text having a set of ordered characters;

3   flipping the characters of the line of text within the line of text about a center

4 vertical axis of a display;

5   identifying a set of runs of foreign characters in the line of text; and

6   flipping the characters within each run of foreign characters about a center

7 vertical axis of each run of foreign characters.

1   51. The method of claim 50 further comprising:

2   receiving a block of text;

3   breaking the block of text into a set of lines of text; and

4   performing the receiving the line of text, flipping the characters of the line,

5   identifying and flipping the characters of the runs for each line of text of the set of lines

6   of text.